

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference PHNL031352WO	<b>FOR FURTHER ACTION</b>		See item 4 below
International application No. PCT/IB2004/052454	International filing date ( <i>day/month/year</i> ) 17 November 2004 (17.11.2004)	Priority date ( <i>day/month/year</i> ) 24 November 2003 (24.11.2003)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant KONINKLIJKE PHILIPS ELECTRONICS N.V.			

<p>1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 <i>bis</i>.1(a).</p> <p>2. This REPORT consists of a total of 7 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>																
<p>3. This report contains indications relating to the following items:</p> <table> <tr> <td><input checked="" type="checkbox"/> Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/> Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/> Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/> Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/> Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/> Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input checked="" type="checkbox"/> Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input checked="" type="checkbox"/> Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> <p>4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).</p>	<input checked="" type="checkbox"/> Box No. I	Basis of the report	<input type="checkbox"/> Box No. II	Priority	<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/> Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/> Box No. VI	Certain documents cited	<input checked="" type="checkbox"/> Box No. VII	Certain defects in the international application	<input checked="" type="checkbox"/> Box No. VIII	Certain observations on the international application
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<input checked="" type="checkbox"/> Box No. VIII	Certain observations on the international application															

<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No. +41 22 740 14 35</p>	<p>Date of issuance of this report 29 May 2006 (29.05.2006)</p>
	<p>Authorized officer</p> <p><b>Cecile Chatel</b></p> <p>Telephone No. +41 22 338 70 60</p>

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

REC'D 21 FEB 2005

WIPO

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To:

see form PCT/ISA/220

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/B2004/052454

International filing date (day/month/year)  
17.11.2004

Priority date (day/month/year)  
24.11.2003

International Patent Classification (IPC) or both national classification and IPC  
G01R33/385, F16F15/02

Applicant  
KONINKLIJKE PHILIPS ELECTRONICS N.V.

### 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the International application
- ☒ Box No. VIII Certain observations on the International application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

### 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/IB2004/052454

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ in written format
    - ☐ in computer readable form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in computer readable form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

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**Box No. V Reasoned statement under Rule 43b/s.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-13
	No: Claims	
Inventive step (IS)	Yes: Claims	9,11
	No: Claims	1-8,10,12,13
Industrial applicability (IA)	Yes: Claims	1-13
	No: Claims	

2. Citations and explanations

**see separate sheet**

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**Box No. VII Certain defects in the International application**

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The following defects in the form or contents of the international application have been noted:

**see separate sheet**

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**Box No. VIII Certain observations on the International application**

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The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

Thus, the apparatus of claim 1 would appear to lack at least an inventive step w.r.t. document D1.

The same applies to the corresponding method defined in claim 13.

*Claim 2:*

See D1, Fig. 1.

*Claim 3:*

See D1, col. 4, l. 36-39.

*Claim 4:*

An arrangement to influence to a different degree different parts of the gradient coil system would appear as a straightforward extension of what is disclosed in D1 considering that gradient coil systems usually consist of separate sub-coils (e.g. Maxwell coils, saddle coils etc.) which generate heat to a different extent. Consequently, in order to maintain the temperature above the glass transition temperature a separate control of the different parts becomes necessary. Therefore, claim 4 would not appear to add anything inventive.

*Claim 5:*

See D1, col. 4, l. 25-30.

*Claims 6, 8 and 10:*

An arrangement of the control to generate heat to a different extent for different parts of the gradient system (see the above remarks on claim 4) would appear to necessitate separate circuit parts of the fluid circuit so that the additional characteristics defined in claim 6 are consequential features.

*Claim 7:*

The additional features set forth in this claim concern means for controlling the temperature of the cooling fluid. However, it is a customary design option to provide two circuit parts for hot and cold fluid which to be connected via a valve in order to control the temperature of a fluid.

*Claim 12:*

It appears that a fluid is used for heating the gradient system in the assembly disclosed in D1. The provision of electrical resistance wires would appear as an equivalent alternative which the skilled person would select in accordance with circumstances without the exercise of any inventive skill, in particular as the advantages thereof are readily contemplated in advance (ease of manufacture, cheaper design etc.).

**1.3 Inventive step of claims 9 and 11:**

Bearing in mind the clarity objections stated below, the subject-matter of claim 9, in combination with any claim to which it refers would appear to be inventive: The provision of separate circuit parts for the binding agent and a number of sub-gradient coils has the effect that it becomes possible to make, for example, the epoxy resin adopt a higher temperature than the gradient coil system. The arrangement of D1 suffers from the drawback that the temperature of binder and gradient coils is the same. However, to avoid a delamination of the gradient coil system and a strong increase of the temperature within the examination space (as far as the gradient coils face the examination space) it is advantageous to have separate circuit parts. Such an arrangement of the circuits is not rendered obvious by the available prior art. Likewise, the additional features defined in claim 11 would not appear to be rendered obvious by the prior art. They may be considered as solving the problem that the prior art relies on a real-time measurement of the temperature of the system. Such a measurement can be dispensed with, if the relationship between energy consumption and the specific MR data acquisition is taken into account.

**2. Re item VII: Certain deficiencies in the application**

In accordance with the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D1 should be mentioned in the description, and this document should be identified therein.

**3. Re item VIII: Objections pursuant to Art. 6 PCT**

3.1 It is not clear what is meant with "substantially situated" in claim 1, line 3. The

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

International application No.

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gradient coil system does not appear to be partly situated outside the main magnet system. The same applies to the wording "situated basically" in claim 13.

- 3.2 It is not clear what the "sub-gradient coils" (claims 1 and 13) are composed of (gradient coils for creating gradients in different directions, or components of only an x(y,z)-gradient coil etc.)
- 3.3 It appears that not every temperature above the glass temperature is suitable for attaining the desired effect (claims 1 and 13). Consequently, the claims should contain a functional statement making clear the motivation for the temperature increase.
- 3.4 Claim 5 mentions "the fluid in the circuit" (l. 25) lacking an antecedent definition.
- 3.5 It is not clear for which purpose the fluid circuit is separated into "circuit parts" (claim 6), i.e. the function of the circuit parts should be specified.
- 3.6 It is unclear what "*the capacity* of the separate circuit parts" is (claim 10).